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Graeme Alexander

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EXAMINER

LOEWE, ROBERT S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/523,164	Applicant(s) ALEXANDER ET AL.	
	Examiner ROBERT LOEWE	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 34-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/27/05; 8/29/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-33, drawn to a fire resistant composition.

Group II, claim(s) 34-38, drawn to an electrical cable.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The technical feature linking the claims is a fire resistant composition comprised of a silicone polymer, from 5 to 30 % of mica, and from 0.8 to 8% of a glass additive. However, Leroux et al. (US Pat. 5,264,454) teaches a flame-resistant polyorganosiloxane composition comprising, 10 to 85% of base polysiloxane, 0.5 to 15% of a crosslinking agent, 2 to 40% of hollow glass balls, and 3 to 50% of an intumescent compound (3:45-58), such as mica (2:62). The amounts of the glass filler and intumescent compound partially encompass the ranges of instant claim 1. Therefore, the technical feature linking the claims does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the prior art. Accordingly, Groups I and II are not so linked by the same or a corresponding special technical feature as to form a single general inventive concept.

During a telephone conversation with Mr. Thomas Wozny on 21-Apr-08 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-33. Affirmation of this election must be made by applicant in replying to this Office action. Claims 34-38 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

Claim 17 is objected to because there is no period at the end of the claim. Claim 17 is further objected to because the limitations "aromatic silane" and "aryl silane" are believed to be equivalent species. An aryl group is an aromatic group; conversely, an aromatic group is an aryl group. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 32 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, Claim 32 states that the composition of claims 1 or 19 further comprises items such as a screen, ceiling or electrical switchboard cabinet. Such items cannot be part of the chemical composition of instant claims 1 or 19. For purposes of further examination, the limitation "comprises" will be interpreted that the composition of instant claims 1 or 19 is applicable to (or coated on) products formed for fire wall linings, fire partitions, a screen, a ceiling or lining, structural fire protection, a fire door insert, a window or door seal, an intumescent seal, or in an electrical switchboard cabinet as taught in the instant specification. Appropriate correction is required.

Claim 33 states that the composition comprises a coating of an electrical conductor. Such a coating cannot be part of the chemical composition of instant claims 1 or 19. For purposes of further examination, the limitation "comprises" will be interpreted that the composition of instant claims 1 or 19 is applied as a coating for an electrical conductor as taught in the instant specification. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-5, 7-8, 11, 16, 18, 19, 21-23, 25-26 and 28-32 are rejected under 35 U.S.C. 102(b) as being anticipated by Leroux et al. (US Pat. 5,252,454) as evidenced by Kerenya (US Pat. 6,935,137) and Coster et al. (US Pat. 6,979,662).

Claims 1 and 19: Leroux et al. teaches a flame resistant composition (3:42-62) comprising 10 to 85 weight % of a silicone polymer, 3 to 50 weight% of an intumescent compound, such as mica (2:62), and 2 to 40 weight% of hollow glass balls, preferably 6 to 25 weight% (1:64), which partially encompasses the range of instant claim 1. No other polymeric components other than silicones are taught by Leroux et al.; hence the polymer component consists essentially of a silicone polymer.

Claims 3-5, 7-8, 21-23 and 25-26: Leroux et al. teaches using soda lime glass which has a softening temperature of between 620 and 700 ° C, as evidenced by Kerenya (5:60-65), and has an alkali metal content ($K_2O + Na_2O$) of from 10 to 20 %, as evidenced by Coster et al. (1:24-30).

Claim 11: Leroux et al. teaches the composition (3:42-62) of instant claim 1 which consists essentially of a silicone polymer (10 to 85 weight %), a crosslinking agent (0.5 to 15%), glass additive (2 to 40 weight %), and 3 to 50 weight % of an intumescent compound, such as mica (2:62).

Claims 16 and 18: Leroux et al. teaches a crosslinking agent such as tetraethyl silicate (3:22), which is also a silane coupling agent, and can be employed in amounts which encompass the range of instant claim 18 (3:54-55).

Claims 28-31: Because Leroux et al. teaches the flame retardant compositions of instant claim 1 and 19, it follows that the physical and chemical properties of the compositions of

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Leroux et al. would satisfy the physical and chemical property limitations of instant claims 28-31. A chemical composition and its properties are inseparable. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655, (Fed. Cir. 1990). See also *In re Best*, 562 F.2d 1252, 195 USPQ 430, (CCPA 1977). “Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established.”

Claim 32: Leroux et al. further teaches that the fire-retardant compositions are used for window seals (1:8-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 2, 6, 9, 10 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claims 1 and 8, and further in view of Crompton (US Pat. 4,879,066).

Leroux et al. teaches the composition of instant claim 1 as described above. Leroux et al. does not explicitly teach that the glass additive may be frits and that the frits may be a blend of low and high softening point glass additives. However, Crompton teaches a fire retardant additive which comprises a blend of low and high softening/melting glass frits (1:61-2:10). Leroux et al. and Crompton are combinable because they are from the same field of endeavor, namely, fire-resistant compositions. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to add a blend of low and high softening glass frits as taught by Crompton into the fire-resistant compositions as taught by Leroux et al. and would have been motivated to do so since Crompton teaches that the addition of frits of different melting temperatures provide continuous flow of molten frit as temperatures increase providing a fused protective layer (1:61-68).

Leroux et al. further teaches that the glass additive has an alkali metal oxide content of less than 30 by weight of the glass additive, as described above. Leroux et al. does not explicitly teach that the composition may further comprise inorganic fibers which do not melt at 1000 degrees C. However, Crompton teaches a fire retardant composition which comprises a ceramic fiber (2:11-15). At the time of the invention, it would have been obvious to a person having

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ordinary skill in the art to add an inorganic fiber/ceramic fiber as taught by Crompton into the fire-resistant compositions as taught by Leroux et al. and would have been motivated to do so because Crompton teaches that the inclusion of ceramic/inorganic fibers can bind the frits and remains unchanged at temperatures above 1000 degrees C (2:11-15).

Leroux et al. does not explicitly teach that additional fire retardant additives such as those of instant claims 9 and 27 may be added. However, Crompton teaches the addition of alumina trihydrate (2:16-25). At the time of the invention, a person having ordinary skill in the art would have found it obvious to add alumina trihydrate as taught by Crompton into the compositions as taught by Leroux et al. and would have been motivated to do so since Crompton teaches that alumina trihydrate releases most of its adsorbed water between 200 and 330 degree C to dampen burning and reduce smoke emission (2:16-25), which are desirable traits for the compositions taught by Leroux et al.

Claims 9 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claims 1 and 19, and further in view of Cella et al. (US Pat. 4,833,190).

Leroux et al. teaches the composition of instant claim 1 as described above. Leroux et al. does not explicitly teach that additional fire retardant additives such as those of instant claims 9 and 27 may be added. However, Cella et al. teaches the addition of zinc borate (abstract). Leroux et al. and Cella et al. are combinable because they are from the same field of endeavor, namely, flame retardant compositions comprising a silicone matrix material. At the time of the

invention, a person having ordinary skill in the art would have found it obvious to add zinc borate as taught by Cella et al. into the compositions as taught by Leroux et al. and would have been motivated to do so since Cella et al. teaches that zinc borate reduces smoke emission (abstract), a desirable trait for the compositions taught by Leroux et al.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claim 1 above, and further in view of Hedrick (Mica, 1997, first published on the web on 8/24/2000).

Leroux et al. teaches the composition of instant claim 1 as described above. Leroux et al. does not explicitly teach that the mica which can be employed in the compositions can be either phlogopite mica or muscovite mica. However, a person having ordinary skill in the art recognizes that mica is not a single species but represents a class of minerals. Because of this, a person having ordinary skill in the art would have found it obvious to choose a specific type of mica, and based on the teaching of Hedrick, would have been motivated to choose either muscovite mica since it is abundant and has superior electrical properties, or phlogopite mica since it remains stable at high temperatures and is used where high heat stability is required.

Claims 14 and 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claim 1 above, further in view of Sawada (JP 09-55125).
For convenience,

Leroux et al. teaches the composition of instant claim 1, as described above. Leroux et al. does not explicitly teach the particle size of the mica which may be employed. However, a person having ordinary skill in the art would have found it obvious to turn to the relevant prior art for selection of the particle size of the mica filler. Sawada teaches a flame-retardant composition comprising a silicone rubber matrix and various flame-retardant fillers including mica, as shown in the table of the Sawada. Said document further teaches that the particle size of the mica is preferably from 100-300 microns (paragraph 0009), which substantially encompasses the range of instant claim 14 and 15. Leroux et al. and Sawada A person having ordinary skill in the art would have been motivated to select mica having the particle sizes taught by Sawada into the compositions as taught by Leroux et al. since Leroux et al. teaches that the compositions with a reasonable expectation of success.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claims 1 and 16 above, further in view of Matsumoto et al. (US Pat. 6,174,943).

Leroux et al. teaches the composition of instant claim 1 and further teaches the addition of a silane coupling agent of instant claim 16, as described above. Leroux et al. does not explicitly teach that the silane coupling agent is selected from the group of silane coupling agents of instant claim 17. However, Matsumoto et al. teaches a flame-retardant composition comprising mica in which the mica is treated with a silane coupling agent (6:58-64). Leroux et al. and Matsumoto et al. are combinable because they are from the same field of endeavor, namely, flame-retardant compositions. At the time of the invention, a person having ordinary

skill in the art would have found it obvious to include a silane coupling agent, such as an epoxysilane coupling agent as taught by Matsumoto et al. into the compositions as taught by Leroux et al. and would have been motivated to do so because Matsumoto et al. teaches that the addition of a surface treatment agent increases adhesion between mica and the host resin and that an epoxysilane coupling agent in particular is preferred since it does not compromise the physical properties of the composition (6:58-64).

Claims 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claim 19, and further in view of Crompton (US Pat. 4,879,066).

Leroux et al. teaches the composition of instant claim 19 as described above. Leroux et al. does not explicitly teach that the glass additive may be frits and that the frits may be a blend of low and high softening point glass additives. However, Crompton teaches a fire retardant additive which comprises a blend of low and high softening/melting glass frits (1:61-2:10). Leroux et al. and Crompton are combinable because they are from the same field of endeavor, namely, fire-resistant compositions. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to add a blend of low and high softening glass frits as taught by Crompton into the fire-resistant compositions as taught by Leroux et al. and would have been motivated to do so since Crompton teaches that the addition of frits of different melting temperatures provide continuous flow of molten frit as temperatures increase providing a fused protective layer (1:61-68).

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Leroux et al. (US Pat. 5,262,454) as applied to claims 1 or 19, and further in view of Beauchamp (US Pat. 5,227,586).

Leroux et al. teaches the composition of instant claims 1 and 19 as described above. Leroux et al. does not explicitly teach that the compositions taught therein can serve as insulating sheaths for electrical cables. However, Beauchamp teaches fire resistant compositions which are used in electrical cables. Leroux et al. and Beauchamp are combinable because they are from the same field of endeavor, namely, fire-resistant compositions. At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ the fire-resistant compositions as taught by Leroux et al. as fire-resistant insulators for electrical cables and would have been motivated to do so since Beauchamp teaches that coating electrical cables with fire-resistant sheaths have a number of benefits and advantages and are required by Government regulations so as to ensure the safety of people in the event of fire (1:9-30).

Relevant Art Cited

The prior art made of record and not relied upon but is considered pertinent to applicants disclosure can be found on the attached PTO-892 form.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571) 270-3298. The examiner can normally be reached on Monday through Friday from 5:30 AM to 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. L./
Examiner, Art Unit 1796
11-Apr-08

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796